Gram Sevak

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THE NEW ROLE

In our last issue we mentioned that the report on the working of Community Projects by a Study Team appointed by the Committee on Plan Projects was just released for publication. The report of this Study Team has made many recommendations of great importance to the future of our programme. We give below certain extracts from the report relating to the Gram Sevaks, their training and their role in the programme.

WE HAVE referred to the need for reducing the area of operation of the Gram Sevak. It is difficult to prescribe a standard applicable to all regions; but normally the Gram Sevak should not be placed in charge of an area with a population exceeding 800 families or 4,000 persons; a larger charge will deprive him of the opportunity or possibility of establishing personal contact with all the families in his circle.

Within his circle the Gram Sevak should perform the following functions :

(i) The entire agricultural extension programme including plant protection, agricultural engineering and horticulture.

(ii) The entire animal husbandry programme including castration, first-aid and inoculation of cattle and improvement of fodder; development of fisheries; development of poultry.

(iii) First-aid and distribution of standard medicines as a part of the public health and medical programme and improvement of environmental sanitation.

(iv) Assistance to teachers and other workers to plan and execute the social education and primary education programmes.

(v) Organisation of Shramdan.

(vi) Programme of field education for members of co-operative societies; the Gram Sevak should, however, neither hold any office nor be responsible for any office work in any local co-operative organisation.

(vii) As we propose that all development work should be done by the village panchayat, there should be an organic link between the village panchayat and the Gram Sevak. We, therefore, propose that he should be the development secretary of the village panchayat, when a single village panchayat covers his circle,

otherwise of the council of all the village panchayats in his circle; but he should not in any manner be responsible for any other work of the panchayat including the management of its office.

Until such time as our proposals for democratic decentralisation are given effect to, it will be useful if a closer link is established between the Gram Sevak and the village panchayat. The Gram Sevak as the development secretary of the village panchayat should place before it at the time of each monthly meeting the progress reports of the development work in the circle. The village panchayat after scrutiny should forward its comments to the Block Development Officer.

The quality of personnel at the village level can be kept up at a satisfactory level not merely by appropriate training and competent direction from the top, but also by providing reasonably attractive service conditions and adequate incentives such as a pay-scale commensurate with the Gram Sevak's qualifications, duties and responsibilities, a fixed travelling allowance or cycle allowance, reasonable residential accommodation, security of tenure, scope for promotion and rewards such as special educational tours, award of certificates of merit, etc. They should provide a useful and large source of recruitment to certain cadres like Panchayat Officers, Co-operation Officers and Social Education Officers. The Gram Sevak will be responsible to different block-level extension officers for different aspects of his work. It is, therefore, recommended that the Block Development Officer should invariably consult all the extension officers before recording his remarks on the annual assessment of the Gram Sevak's work.

TRAINING OF PERSONNEL

The Ministry of Community Development, some time ago, appointed an Expert Committee to review the arrangement for training personnel for work for the community development programme. We have studied the report of the Committee with great care. We have also visited various training centres and held discussions with the teachers and the taught. We have further benefited by discussions with representatives of the State Governments. In this Section, we are summarising our views on the subject.

GRAM SEVAK

The minimum academic qualification for direct recruitment is Matriculation, post-basic or their equivalent. Sometimes, applicants are found to possess a diploma in agriculture. They should be a welcome addition to the Gram Sevaks cadre and in their case the training programme proposed should be abbreviated appropriately. The age limits for direct recruits may be 18 and 30 years; departmental candidates should be taken purely on the basis of merit and may have to be allowed a relaxation in this respect up to 40 years. While it is generally recognised that the candidates must have a rural background, what is "rural background" is generally left vague. Candidates whose parents or guardians live in non-urban areas and who themselves spend their vacations at home should be considered to possess a rural background.

In the matter of selection, physical fitness, power of endurance, general knowledge, aptitude for development work, leadership and initiative, power of expression, power of adjustment, histrionic talent and personality should all be taken into consideration. There should be tests for all these; the tests and interviews will, therefore, have to be spread out over a number of days. As right selection is of importance, we suggest that a guide book could be produced by the Ministry of Agriculture or by a committee of Development Commissioners for the benefit of the selection boards.

We also consider that the agricultural part of the syllabus has to be improved very considerably and made equivalent to that of the recognised diploma courses in agriculture. The Gram Sevak will, certainly during the next few years, have to be more effective in the field of agri-

culture than he has been so far. We are not satisfied that with the type of training he has been receiving, he has been able to make any special mark in this all-important field and for this reason, we emphasize the need for giving him a much better training in agriculture. We also suggest that the syllabus, so far as agriculture is concerned, should be drawn up in consultation with the Universities so that the qualified Gram Sevak, after a prescribed number of years in the field, should be eligible to join the degree course in agriculture without starting at the bottom of it. Apart from this, we suggest that this training should include the following items :—

(a) Use of a simple medicine chest;

(b) elementary survey training and measures for soil conservation;

(c) elementary knowledge of revenue matters, particularly those relating to development work;

(d) techniques of group study, planning and work;

(e) working through panchayats and co-operatives;

(f) practical training in the use and maintenance of agricultural implements;

(g) castration and inoculation;

(h) general economics of rural industries and familiarity with simple improved tools for such industries;

(i) a working knowledge of elementary (basic) education;

(j) a knowledge of social education;

There is a proposal to take 200 hours out of the present 18 months for imparting to the Gram Sevak some training in rural industries. We are doubtful whether such short training will be of any special use; but apart from this, the proposals we have made themselves require that the total period of training should be very much more than 18 months. The diploma course in agriculture is a two-years course, though admittedly there are a number of holidays and vacations and the boys do not always put in a full day's work according to current conceptions. We, therefore, suggest that the integrated course on the lines, indicated above, should be for full two years with, perhaps, a brief break in the middle but no long vacations; almost all the religious festivities should take the trainees right among the villagers, not merely to give them an opportunity to enjoy themselves but also to understand the rural atmosphere. Some of the training centres, now functioning in different parts of the country, appear to be inadequately staffed or equipped for the large number trainees attending them.

These training centres should be invariably located in genuine rural areas; otherwise, we cannot provide the trainees with conditions similar to those in which they will have to function after the training. Agricultural research institutions and these training centres should keep in touch with each other, the staff of the two closely collaborating. Problems and questions will often go from the field to the training centre and from the training centre, they have to find their way to the research station.

Assessment at institutional level and supervision now obtaining are not satisfactory. In the meantime, the training programme is expanding rapidly involving many more trainees and instructors. Apart from supervision, the assessment of training institutions as such has become imperative. Institutional assessment would mean looking into the qualifications of the teaching staff, organisation of the training programmes, training facilities available, the methods of internal evaluation of the work of trainees, the standard of teaching, etc. Wherever an institution is below the requisite level of efficiency, necessary steps will have to be taken either to improve it or to drop it. As we went about studying Gram Sevaks training centres, the need for such assessments pressed itself upon us obstinately. We recommend that immediate steps should be taken in this direction both by the State Governments and by the Central Ministries concerned.

In our view, a scheme of apprenticeship as part of the training programme needs to be drawn up for every Gram Sevak. It would be good if the State maintains an exhaustive list of efficient

(Continued on page 5)

Bat-Chit

Villager: Ram Ram, Gram Sevak Sahib! Before you begin to complain of my non-co-operation in organising Village Leaders' Camps I want you to listen to me.

Gram Sevak: My dear friend, you think I can misunderstand you. This is my monthly visit to your village, as you know, but I would certainly like to know the reason of your non-co-operation.

Villager: Do you want my honest opinion about the whole affair?

Gram Sevak: Certainly, we must talk very frankly about it.

Villager: Then let me tell you something interesting about some of the village leaders camps.

Gram Sevak: Please, do.

Villager: Those who participated in this camp were not the village leaders. The majority of them hardly owned any land and do not even know how to raise a single blade of grass.

Gram Sevak: How do you say that? We select the village leaders on the basis of the say that they have in the village matters. In the village meetings when we try to introduce new methods or new projects, it is these village leaders who speak most of the time, who are not shy and who are willing to cooperate with us.

Villager: I must say Gram Sevak Sahib, with all your cleverness, you have yet to know the village and the real village leaders. You cannot find him in your village meetings or in your discussions. He is busy tilling his land, looking after his cattle and helping his other village friends in so many ways. He is not very smart, not always even literate but he knows the pulse of the villager and the needs of his brethern. Do you object to this village leaders' camps because, as you say, we do not select the real village leaders?

It is mostly because of this that I oppose it. But there are some other reasons also.

Gram Sevak: What are those?

Villager: First of all, let us take the season when these camps are held. Very often, these camps take place at the time when every minute of a cultivator is precious and he spends it in his field.

Gram Sevak: We do so because we want him to be benefited by the knowledge and the new skills which are given to him in the village leaders' camps so that he might make a good use of it.

Villager: Suppose you hold these camps at a time when the villager has finished harvesting and has a little more time to spare. You can certainly hold your camps then. Can't you?

Gram Sevak: I suppose you are right. After all the training that we give in the camps is not likely to be implemented by him immediately.

Villager: Now you have begun to understand it. I can tell you that no village leader—if he is a village leader—can afford to be away from his fields for three days and four nights. That is why the types of village leaders that you put in these camps can be anything but the village leaders.

Gram Sevak: What are the other defects, in your view, in the holding of these camps?

Villager: Well, Gram Sevak Sahib, you know much better about these things than I do. I suppose you are not making fun of me by asking for my suggestions.

Gram Sevak: Certainly not! I have as much to learn from you—if not more—as you have to from me. It is only by mutual exchange of views that we are able to learn from each other. You

know, how much time and energy I spent in organising these camps and I was really hurt when I found that most of the villagers including you, did not participate in this activity. But now you have been good enough to explain the main reasons. I must know them so that when I hold the next village leaders' camp, I may not commit the same mistake.

Villager : I do not know if what I am telling you is all correct but all this is based on my own experience. That is what I feel. Now let me take up another defect in the organisation of the camps. It is the question of payment. You charge Rs. 4|- from each village leader to attend the camp. I do not think that is fair.

Gram Sevak : But how do you expect us to feed so many people if we do not have any money? How do you expect the Government to pay for everything?

Villager : Certainly, I do not mean that. What I was trying to tell you is that it is impossible for any villager to pay Rs. 4|- off-hand for this purpose. Of course if the Government forces him to do it, he will do so but left to himself, he would rather spend Rs. 4|- in meeting some more pressing demands than contributing it to a village leaders' camp about the usefulness of which he may not be fully convinced.

Gram Sevak : But can you suggest a better method of running these camps?

Villager : I do not know if I can do that. Perhaps it would be easier for us to contribute in kind rather than in cash. We can contribute our dry rations, pool them together and lessen the expenses to that extent.

Gram Sevak : This is a good idea. I never thought of it before. Now let me make myself clear about your suggestions. Let us have them again.

Villager : I do not think I have made any profound remarks. These are simple. Now for instance when you are thinking of running village leaders' camps, the following points should be kept in mind.

(1) Spot out the correct man who has the real qualities of a village leader backed by field experience and who is acceptable to the community.

(2) Help him in all ways but allow him to develop self-confidence.

(3) Avoid superfluous ceremonies and shows. A practical villager does not want useless distractions.

(4) Do not call it a training school or centre because the very name school makes him feel very humble and ridiculous.

(5) Do not tax his time or money for this purpose.

Gram Sevak : Thank you so much, friend. You have been a great help to me. I shall certainly discuss these points with the B.D.O. and I am sure next time when we have the camp, you would not have any reason to complain.

Villager : Thank you so much.

THE NEW ROLE

(*Continued from page 3*)

Block Development Officers working in different parts of the State. All Gram Sevaks should be attached to such Block Development Officers for a period of at least one month in small batches, the smaller the better; if possible, this one month should not be included in the two years of training which we have prescribed.

The Gram Sevika's work is of a responsible nature and her course of training needs a reasonably high academic qualification if she is to benefit from it. The age range for recruitment may be between 18 and 35 years, but considerable relaxation will have to be made in individual cases as the question of getting the proper type of women candidates is complicated by a variety of family, social and caste factors. The rural background is very much more important in the case of Gram Sevikas, as the gulf between the town-educated girl and her rural sister is very much wider than the similar gulf between the town and village boys. At the same time, it will be difficult to obtain even a fair proportion of our requirement from girls with rural background.

A SUCCESSFUL EXPERIMENT

A B.D.O.

In the village Vellattanjur in Velur Panchayat of Wadakancheri N.E.S. Block there is an extent of 100 acres forming one single block of paddy fields cultivated by 50 persons. All these cultivators are tenant farmers and considering the area of each farm and the yield therefrom, the margin left to the cultivators after payment of rent to the landlord in kind is very meagre. The rent also varies from plot to plot and from landlord to landlord. The farmers have therefore been persuaded to form themselves into a cooperative society to improve their lot. A few consented and a start was made in March '56.

The idea then was that the society would help its meber cultivators with supplies and services. After much persuasion the society got sufficient membership to get itself registered in March 1956 as Multipurpose Cooperative Society with the object of Co-operative Farming.

Now there are 120 members in the Society with a paid up share capital of Rs. 2,525|-; each share costing Rs. 5|-. The Society started work with this small capital by extending agricultural credit to its members, in fertilizers, improved seeds and equipments. An attempt was also made to get the farmers try an experiment in Co-operative Farming.

The difficulties confronted in this procedure were—(1) the farmers were afraid to part with possession of their lands, (2) the cultivators were not sure of the result of this new experiment and they feared that their dividends would not be adequate to pay rent to their land-lords, with the result that they may be evicted and (3) they were anxious not to lose their right to labour in the fields. Their average income from their cultivation may not be much to speak of, but they managed to eke out their livelihood from it by taking upon themselves the actual labour in the fields without engaging outside labour. By incessant persuasion and personal assurances 11 of these cultivators agreed to surrender their possession to the Society for joint cultivation. The total extent surrendered came to 11.5 acres. To reassure the cultivators however it was so arranged that each of these 11 cultivators is allowed to cultivate his own land under the direction and control of the Society so that the wages of labour may be ensured to them. Each farm will be accounted for separately. The society has resolved that the three per cent of the next yield from each farm realised after the close of the Agricultural operations this year should go to the Society and the balance should go to the cultivators. To create confidence, this arrangement had to be entered into for a temporary period of one year only so that the cultivators will be at liberty to get their lands back from the Society after one year if they so desire.

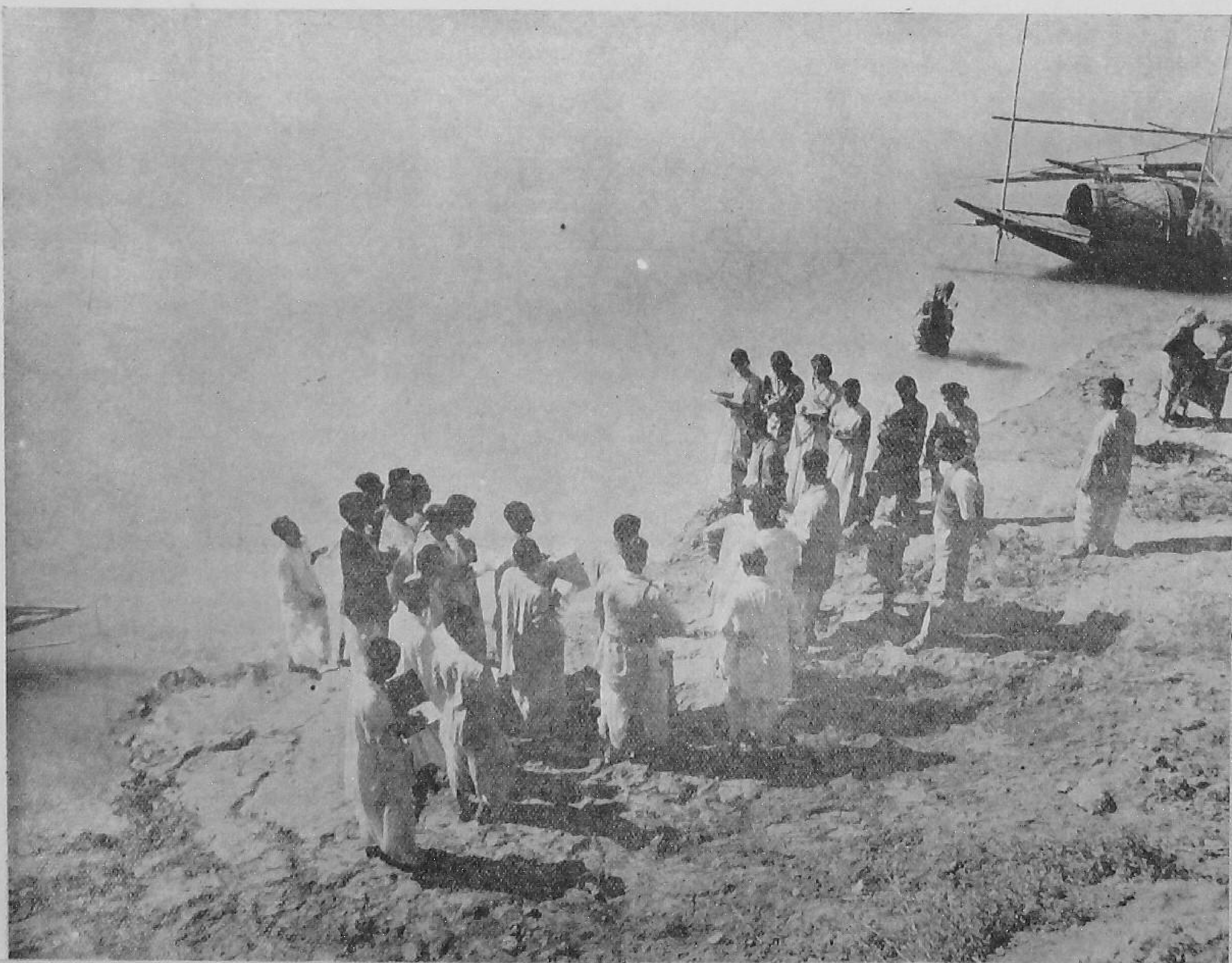
The first crop was not much of a success due to the floods that occured immediately after the transplantation. The second crop is now on and will last till Feb, 1958. Due to the scarcity of water for the second crop usually the lands lie fallow in this season. But this year the Society has taken a pump set on hire and can have a supply of enough water from the adjoining river. It may also be mentioned that this has been made possible by extending the electric lines to the fields through the efforts of the Society and N.E.S. Block. All the hundred acres of the Block are now getting water for the second crop for the first time.

The water source would be adequate to start even a third crop in this area during this year. As the pumping forms a big item of expenditure to

the Society, the N.E.S. Block has already placed an order for a 16 H.P. Motor and pump to be supplied to it. This is expected to be installed in a months' time. The N.E.S. Block has also undertaken to supply to the Society free of cost one sprayer and one duster for plant protection work. It may also be mentioned that three out of eleven joint farmers have agreed to surrender their lands unconditionally to the Society in the matter of cultivation and harvest. The advent of electricity and the pumping sets have quickened agricultural operations in the countryside and more and more cultivators are offering their lands to be brought under co-operative farming. It is expected that in the coming two years all the 100 acres of the Block would be brought directly under the Society for cultivation.

At present three stages of co-operative farming are being tried by the Society. (1) 100 acres comprising a Block is being supplied with fertilizers, insecticides, improved seeds, and water for irrigation by the Society. (2) Of the above 11.5 acres are being jointly cultivated under the Society's directions. The cultivation is being done by the original tenants themselves under the supervisory control of the Society. (3) Three acres out of the above to be cultivated by the Society direct with hired labour and profits to be shared in proportion to the extent of land of each cultivator.

Out-door training for Extension workers in Public Health



OILSEEDS

M. N. Krishnamurthi

Junior Scientific Officer, National Chemical Laboratory, Poona

OILSEEDS are important articles of commerce. India is one of the leading countries in the world in the variety and production of oilseeds, but the *per capita* consumption of fats and oils in the country is at an appallingly low. Only 8.2 lb. as against the world average of 23 lb. per annum, is being consumed per head. Even according to the Nutrition Advisory Committee of the Government of India, the minimum requirement of fats within the country is estimated at 45 lb. per head per annum. Fats are necessary in human foods since they supply the energy required by the body. Nutritionally they furnish the required essential unsaturated fatty acids for body growth and carry vitamins A, D, E and K and help in the absorption of calcium, carotene, thiamine and lactose. Above all, they play a vital role in the foods since they improve palatability and taste of the diet and prevent premature sensation of hunger after eating.

India is a vast country with varied types of vegetation. Eighty per cent of the population live in over 5 lakhs of villages. These villages are impoverished with urbanization and lack in full employment. One of the effective ways of promoting prosperity among village folks is to tap all resources in rural areas where village people can find remunerative employment. In this direction, cultivation, collection and marketing of minor oil-seeds provide some employment.

In every village there is a certain amount of waste land which is not suitable for farming. This, if properly utilized for the cultivation of trees which bear oil-bearing materials, will significantly add to the prosperity of the village. Further, some of these trees can be looked upon as a permanent form of agriculture since they survive for long periods. Besides the oilseeds or nuts, the trees will yield timber, resins, fixed and essential oils, drugs, lac, dyes, tannins and a host of minor products. The oils from nuts can be easily extracted in village ghanis and provide further scope for employment. Many of the oil-bearing trees and plants can be cultivated in the rural waste lands.

Some of the oils obtained from these sources have immense potentialities. For example, cocoa butter is in great demand by the chocolate manufacturers and the raw materials are being imported from Africa. Similarly, olive oil is an important oil for many cosmetic and pharmaceutical preparations and California is the only producer in the world. Since India is short of these oils and has to be met only through imports, some of the oils from secondary resources can readily be used as substitutes. For example, hydrogenated rice, bran oil, sal butter and hydrogenated mowra oils are good substitutes for cocoa butter. The refined rice oil can be used for olive oil.

A satisfactory margarine can be processed from a mixture of hydrogenated kapok, coconut and rice bran oils. The popy seed oil does not contain opium and so can find ready use in bakery industry.

Industrial oils, safflower and Macassor oils are highly valued as hair oils in European countries. Some of the oils like tung, kamala, hempseed and tobacco seed oils are good drying oils in paints and varnishes. Cashew shell oil has a great industrial potentiality. A number of oils have medicated properties. For chronic rheumatism, malabar fat, karanj oil, safflower and Macassar oils when applied are effective. The neem and chalmoogra oils are useful for purifying blood, regulating the function of the liver and in chronic and obstinate cases of skin diseases. For cure of leprosy chalmoogra oil or 10 drops of margosa oil in fresh milk once a day is generally advocated. Kokum butter is a substitute for cod-liver oil.

HOW TO BECOME A VACCINATOR

With the inauguration of the Five Year Plans, we are striving to achieve greater industrialization in our country. Thousands of new openings are now available to our young men provided they are adequately trained for the proper types of jobs. We propose to have a series of articles on the new careers open to our young men in these columns.

A vaccinator's work is to induce vaccine into the skin of a human being with the object of protecting him against small-pox and tuberculosis. A rotary lancet (a surgical instrument for making cuts in flesh) or a good large-sized surgical needle is used for vaccinating a person. In tuberculin testing and B.C.G. Vaccination, a special type of steel or platinum needle is used.

Small-pox and tuberculosis are two of the major diseases of India which claim thousands of lives every year, mainly among children. To give the highest measure of protection, especially to children, against these diseases, effective primary vaccination is being enforced in the country. Under the health programmes of various States, intensive vaccination campaigns against small-pox and tuberculosis have been organised. As vast areas have to be covered, the existing number of vaccinators, particularly women, have been found to be inadequate, and it is expected that the profession will provide continuous employment to a good number of trained young men and women.

In the performance of his duties, private houses, schools, hostels, boarding houses and different localities of the town are visited by a vaccinator who carries equipment and vaccine 'lymph' with him. In the case of infants, their physical condition is checked before vaccinating them. Appropriate directions are given to vaccinated persons in the matter of after-care, and either follow-up visits are undertaken or the vaccinated persons called for a check-up, a few days after vaccination.

A vaccinator is a field worker and his working hours are usually in the mornings and evenings. The work is generally light, except during special periods of mass vaccination. The job is particularly suited to women.

QUALIFICATION

To qualify for a vaccinator's training, persons should have attained middle school standard. However, the basic educational qualification varies in different States. The duration of training ranges from three to ten months.

The training includes instruction in hygiene, techniques and methods of vaccination and re-vaccination, after-care of vaccinated persons, the storage and use of vaccine lymph, the equipment used by a vaccinator, etc. Practical training in the field is also given. In most of the States, additional training is given at the local vaccine institute which manufactures vaccine lymph.

Persons who are matriculates are eligible for a six-week training course in B.C.G. vaccination given by the State. On completion, the trainees are appointed as B.C.G. technicians.

COST

The cost of training varies from Rs. 10 to Rs. 50 as tuition fee for the entire course. In some States no tuition fee is charged. Living costs range from Rs. 40 to Rs. 60 per month including expenditure on boarding, lodging, etc.

Personal qualities necessary for the job are intelligence and tactfulness with different types of persons, especially the uneducated, and the ability to persuade them to accept vaccination as a preventive against disease. Dealings with the public call for politeness in approach and talk. For outdoor work, good physique is necessary. Ability to ride a bicycle is normally required.

AN OBSTINATE VILLAGE

S. Parasivamurthy

Gram Sevak, N.E.S. Block, Mandya, Mysore.

HAVE YOU come across an obstinate village which would not allow you to take up any activity however good it might be for the villagers? Have you gone through a chilling experience of not receiving any co-operation from the villagers but a definite hostile attitude? I have faced all these when I started my career as a young Gram Sevak.

Sundahalli is a village in Mandya District in Mysore State. It is a big village of 200 families with a population of 700. There was only one primary school and that too without a proper building and equipment. Most of the people were illiterates. There was no unity in the village. The village Panchayat had hardly met. All attempts for improvement of the villagers had resulted in failures. It was to this village that I was posted as a Gram Sevak. I considered it as my first duty to get all the villagers together but failed utterly. There were about 8 to 10 parties in the village and during the first three months, the only improvement that I was able to record was that I reduced the number to three. Later on, through persuasion, cajoling and continued hard work, I was able to gain the confidence of the villagers to some extent. While formerly they would shun me altogether, they are prepared to listen to me now.

Just at this stage, the Rotary club in Mandya—a Distt. Headquarter—about five miles away took some interest in the village. Enthusiastic members of the Rotary Club visited the village, assessed its needs and offered to help financially on the spot. Construction started. We first built the school which was very badly needed. Then the wells, Community Centre and so on. Today, the party factions have disappeared. Earlier hostilities towards the development programme have completely disappeared. My experience during these three years has taught me a great lesson. And that is,—a Gram Sevak must have unlimited patience to put up with the villagers and he must welcome any help from any other agency which is offered to him in his work. It would be a mistake if he considers the Community Development programme as the only agency which is competent to take up the work of rural upliftment. The other agencies who have been in the field like the Rotary club, the Gandhi Smarak Nidhi, Rama Krishna Mission and so on have done admirable work in our villages. We must co-operate with them, pool our resources and see that a happier and better life for our people becomes possible.

CAREERS OPEN TO YOU

(Continued from page 9)

ADMISSION

Entry into the profession is by application to the Medical Officers of Health of local bodies, municipal committees, cantonment boards, Janpad Sabhas etc. and Directors of Health Services of the State concerned. Some posts are also advertised in the press.

Openings for vaccinators exist mostly in the Health departments of local bodies. Sometimes vaccinators are engaged for a few weeks during an epidemic or at *melas.*

SALARIES

There is considerable variation among the States as regards the conditions of service of vaccinators. The minimum salary paid to them ranges from Rs. 25 to Rs. 50. But the pay of the B.C.G. vaccinator (technician) ranges, in various States, from Rs. 45 to Rs. 90 per mensem.

The bigger municipalities usually allow the scale of a lower division clerk to a vaccinator. In Delhi, for instance, vaccinators are employed in the scale of Rs. 55-3-85-4-130. B.C.G. vaccinators receive an additional allowance of Rs. 20 per month.

PROMOTION

Prospect for advancement to better posts, like superintendent of vaccinators, senior vaccinator or head vaccinator, etc., exist in bigger municipalities.

THE IMPROVED SEED

K. Ayyapu Reddy

Village Level Worker, Ulindakonda C. D. Block, Kurnool

DESPITE the advice given by the Agricultural Department to maintain purity of the seed and store them properly the cultivators take little care to maintain the purity of seed.

Good seed should be plump, sound in weight, quality, protein content, colour, well developed in the crop period with the maximum percentage of germination. Immature broken seed or embroyo injured seed will have very low percentage of food reserve in the seed. Fully developed seed produces vigorous healthy seedlings and withstands any adverse conditions during the early periods of plant growth. Every seed has got its nativity which is acclamatised to the locality for different environments of the varieties etc. Selection of seeds should be from areas where the growing conditions are comparable to those in the tract. Now the Agricultural Department has rightly taken up active part in introducnig new strains required for the concerned tracts to help the needy ryots. Yield is the most important criterion on which the selection has to be practised. The nutritive value of the concerned food crops grown must have reputation of the tract.

The seed should not have admixtures of other seeds. If pure viable seed is not available with the grower, he has to approach the nearest Agricultural Officer for advice. If seed is not available in the above said department he has to seek a reliable neighbour to spare some of his seed.

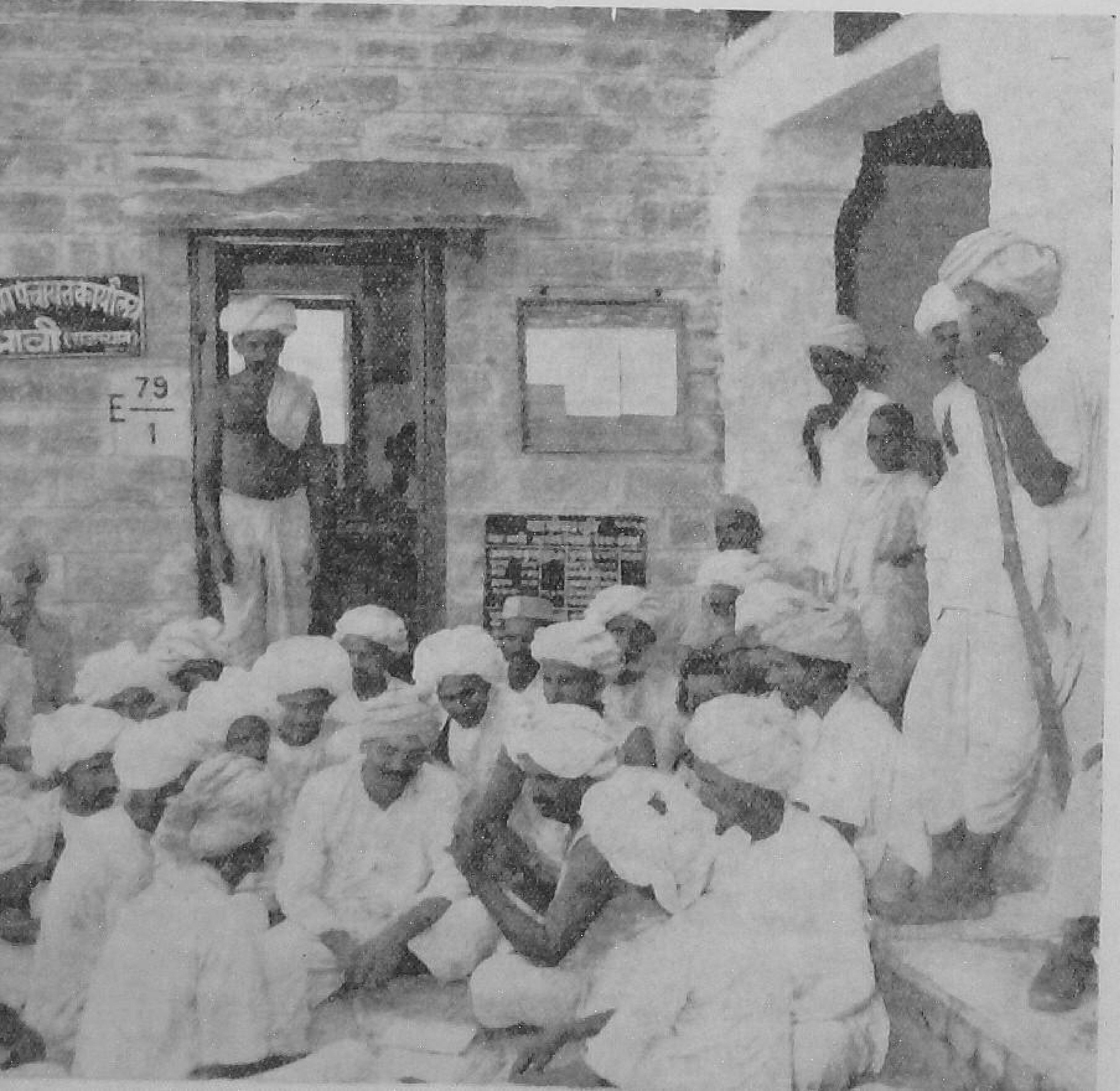
In sowing any seed, pretreatment of seed, for seed—born fungal diseases has to be practised. A simple treatment popularly called solar heat treatment is observed in many places which will control diseases as well as pests on stored seed. The seed after solar heat treatment has to be completely cooled. In some parts seed is treated with urine, red earth and butter after cleaning. For some seed hand pounding is in vogue before sowing. Seed is also immersed in salt water so that lighter seed may be separated from good seed. Treatment of seed with chemicals like agroson G. N. and sulphur are also practised. The chemically treated seed should never be used for human consumption.

Ryots have to store or preserve the good seed from the harvest of the previous crop every year. While the crop is standing it should be rouged. Having rouged the crop in the allocated area, it is brought to a cleaned threshing floor so that purity of the seed is maintained here also. Seed has to be stored for atleast six months, at times upto one season. Various methods are in vogue for the storage of the seed. Seed is stored in well cleaned gunny bags, bins, earthen vats, straw twists, so that single grain from previous produce is not sticking to it. Some store the seed with neem leaf, sand, busa and pack them with cow dung and red earth in bomboo bins. Some collect good ear heads from the previous crop for seed purposes for the ensuing season. For grains some take up heating the 'Patharas' (bins made with Cuddapah slabs) and have busa at the bottom and on the top, and close them air tight. But this is not practised for storing the seed. If windows exist they should be closed and heated over and above the normal temperature with busa or charcoal. Instead of white washing godowns B.H.C. 4% can be sprayed with one ounce in a gallon of water for 100 sq. ft. For stored grains 8 oz. of B.H.C. 5% can be dusted easily. If the pest is not controllable by the above said operation Ethilin di-chloride or cynogas can be used with the advice of the Plant Protection Officers.

Food production on a better scale can be achieved i.e. about 30% more can be produced by the use of improved seeds and their better storage.

We have referred to the need for reducing the area of operation of the Gram Sevak. It is difficult to prescribe a standard applicable to all regions; but normally the Gram Sevak should not be placed in charge of an area with a population exceeding 800 families or 4,000 persons; a larger charge will deprive him of the opportunity or possibility of establishing personal contact with all the families in his circle.

—*COPP Report.*



PANCHAY

—NEW

During our visi blocks we repeated plaints that the fixa had been arbitrary a In most cases, we targets had been pre district level or th officers without cons representatives of th can hardly over-emp role in planning the community dev gramme.

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The quality of personnel at the village level can be kept up at a satisfactory level not merely by appropriate training and competent direction from the top, but also by providing reasonably attractive service conditions and adequate incentives such as a pay-scale commensurate with the Gram Sevak's qualifications, duties and responsibilities, a fixed travelling allowance or cycle allowance, reasonable residential accommodation, security of tenure, scope for promotion and rewards such as special educational tours, award of certificates of merit, etc.

—*COPP Report.*

AT RAJ

PHASE

to various heard com- on of targets d unrealistic. found these cribed by the block level ting the local people. We asise people's d executing opment pro-

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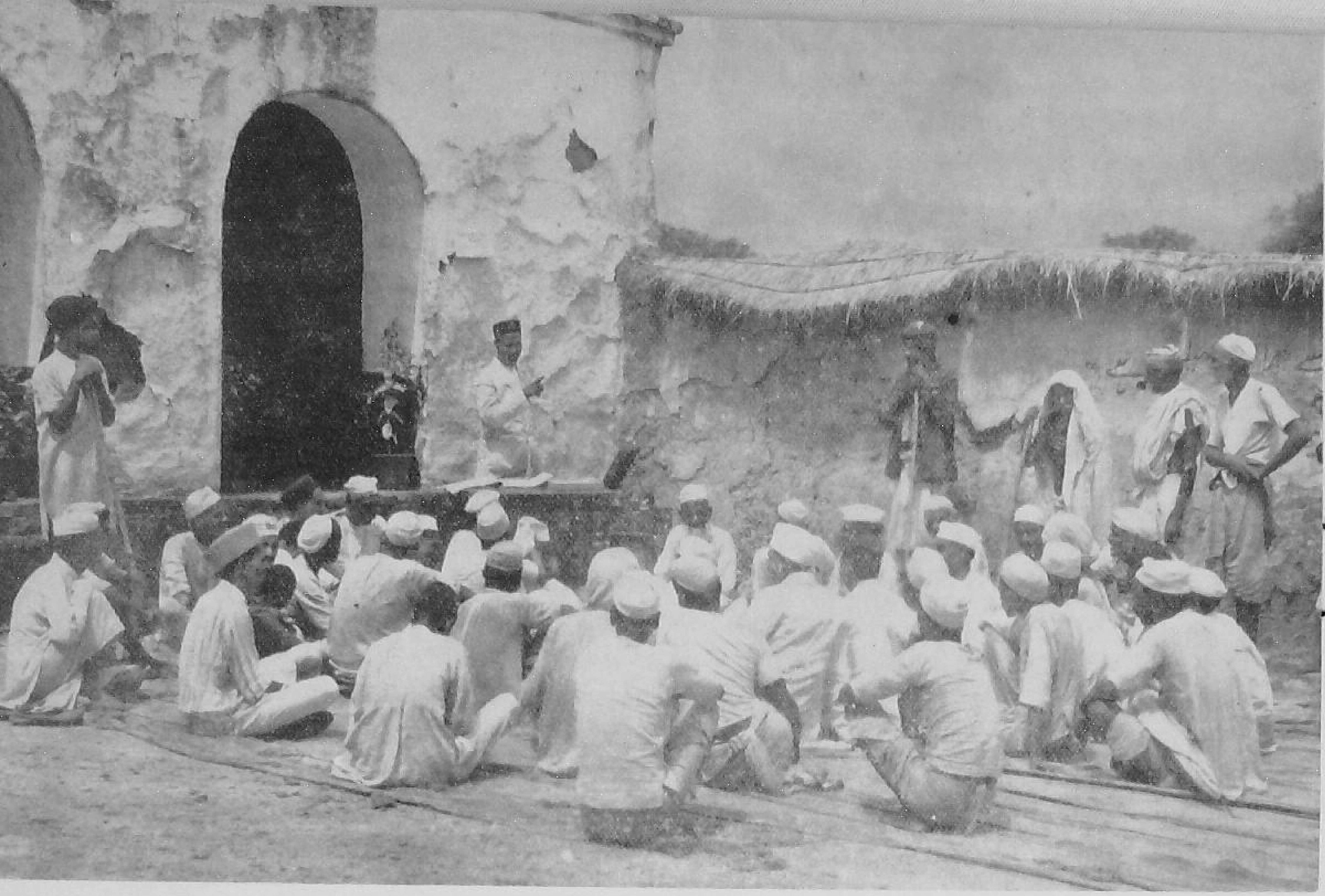


The Changing face of Rural India

CLEAN MILK

Some Practical Hints

Milk is not necessarily clean if it does not have any dirt which can be seen. Clean milk has no germs which produce disease, or anything else in it other than the liquid that comes from the udder.

If you consume clean milk, it will give you good health. If you produce clean milk you will get more profits.

Unclean milk becomes sour quicker than clean milk. Such a milk cannot be transported over long distances. You cannot make unclean milk clean by just filtering it and removing the dirt that is seen.

SIMPLE RULES

Milk is a rich food. So germs easily grow and multiply in it.

It is necessary, therefore, that milk is produced and stored in good condition so that it is not spoiled and thus wasted.

By observing some simple precautions, you can produce clean milk.

Fresh milk from the udder contains very few, if any, germs, but soon after it is drawn, it gets the germs from the surroundings.

If the milch animal is suffering from a disease like mastitis or tuberculosis of the udder, the milk will have plenty of germs. When you mix such diseased milk with healthy milk, the quality of all the milk will be reduced. It will also be a dangerous source of disease.

Hence, make it a practice to invite the Veterinary Officer to examine your animals regularly. Animals with disease are not only a source of disease, but are also poor producers.

It is a good practice to collect the first few strips of milk (fore-milk) in a separate vessel (strip cup). This will contain a high number of germs which have come to the teat from the outside. Don't mix this with the rest of the milk. The Veterinary Officer will also need to examine this fore-milk to detect the mastitis disease.

House your animals in clean surroundings. The shed should have good ventilation. The flooring should be waterproof. The walls should be cemented up to a height of four to five feet. Have it whitewashed from time to time. Have the dung removed three or four times a day. Groom the animals daily to remove the dirt and loose hair.

Clean and wash the shed before each milking. This will prevent dust from getting into the milk. Before milking, wipe the udder with clean water or a disinfectant solution, and a clean towel.

It is not a good practice to suckle calves. Wean the calves at an early age. This will also help you to know the correct milk yield of each animal.

CLEAN MILKING

The milker should also be healthy, and trained to observe clean habits. Before milking, he should wash his hands with soap.

Avoid wet milking. Avoid dipping your fingers in the milk to remove dirt or to test the quality of milk. Both the practices are harmful.

All utensils you use should be clean. Germs hide in dirty utensils. Your utensils should be such that they protect the milk and are easy to clean. Seamless milk buckets and churns, properly tinned and free from rusty spots or crevices, are the best.

Clean all vessels used for storing milk immediately after emptying them. Cleaning becomes difficult if you delay.

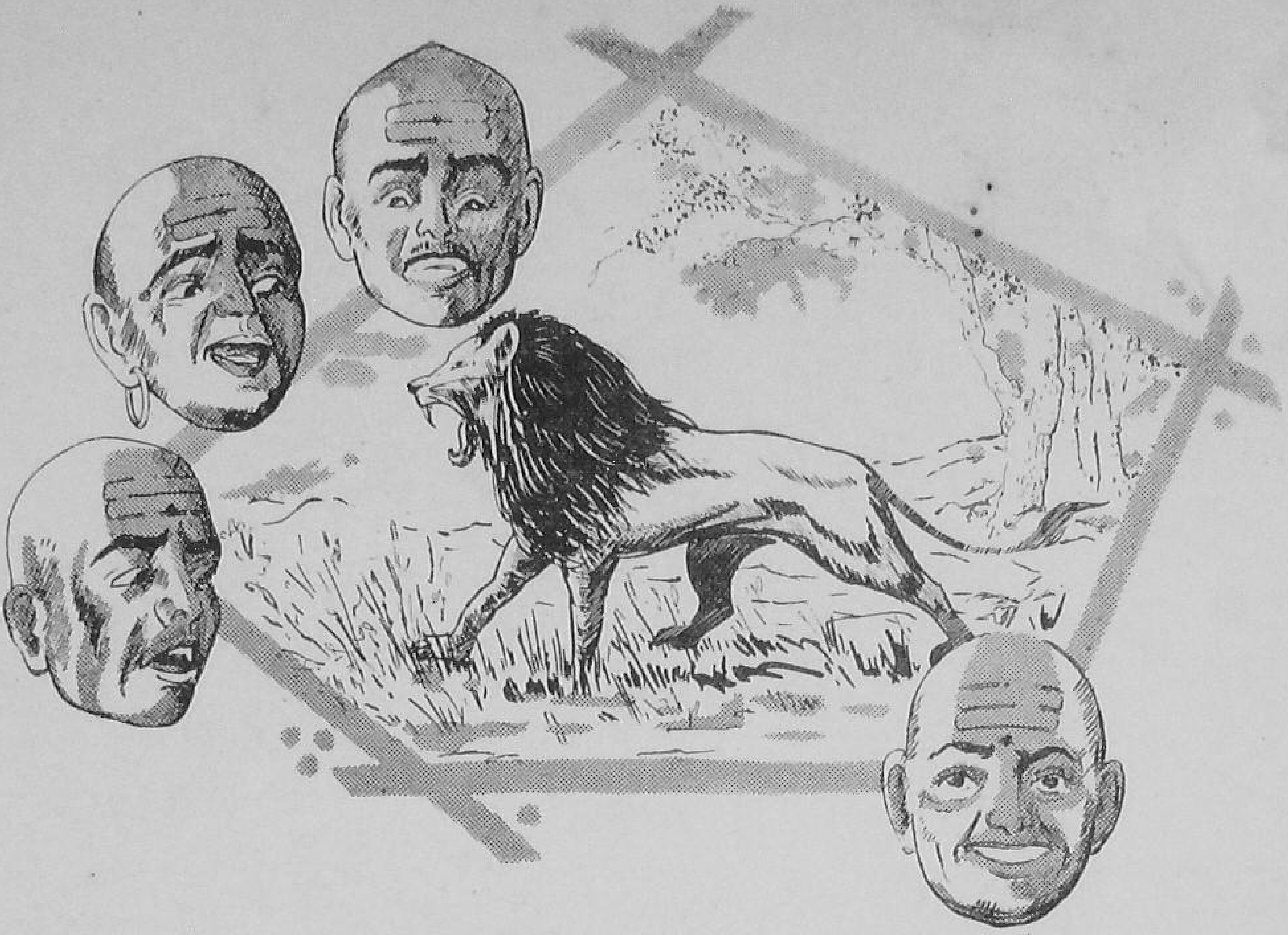
Cooling milk immediately after it is produced keeps down germs, and increases its keeping quality. When milk is collected on a co-operative basis, a small milk-cooling unit can be purchased for this purpose.

HOW TO STORE

After milking, avoid pouring milk from one vessel into another in the cattle shed itself. When transferring milk from pails to large containers, strain it through the double folds of a fine muslin. As the container gets full, cover it with a closefitting lid, and keep carefully till it is delivered.

Have your storage room a little distance away from the milking shed. Such a room should be free from dust and flies.

(Based on Information Pamphlet No. 81 *issued by ICAR, New Delhi).*



STORIES FROM PANCHTANTRA—No.4

THREE FOOLS AND A LION

TODAY I shall tell you the fourth story of Panchtantra—about commonsense and scholarship.

Long, long ago, in a township in Central India, there lived four Brahmins. They were great friends from their school age. Three of them became masters of all learning. They had learnt by heart the Vedas, the Upnishadas, the Puranas and other branches of knowledge. But the fourth did not make much headway in his learning though he had a lot of commonsense and was, therefore, looked down upon by the scholars. One day they decided to go on a pilgrimage. They said, "What is the use of all our knowledge and scholarship if we cannot make use of it by going round the country meeting the kings and receiving presents and money from them". It was, therefore, decided that they should go on a pilgrimage. But one of the scholars said, "Why should we take this man who has no scholarship? He will be a burden on us." The second agreed with him and asked the fourth man not to accompany them. But the third scholar felt that there was nothing wrong in his accompanying them and persuaded the others too to take him with them. Thus the fourth Brahmin who did not have much of the scholarship but possessed a lot of commonsense was allowed to accompany the three scholars.

In the evening the four Brahmins reached a jungle. There they came across some bones under a tree. One of them remarked, "Let us use our scholarship and knowledge in bringing this creature to life." The first man said that he knew how to put the bones together. The second

(*Continued on page 24*)

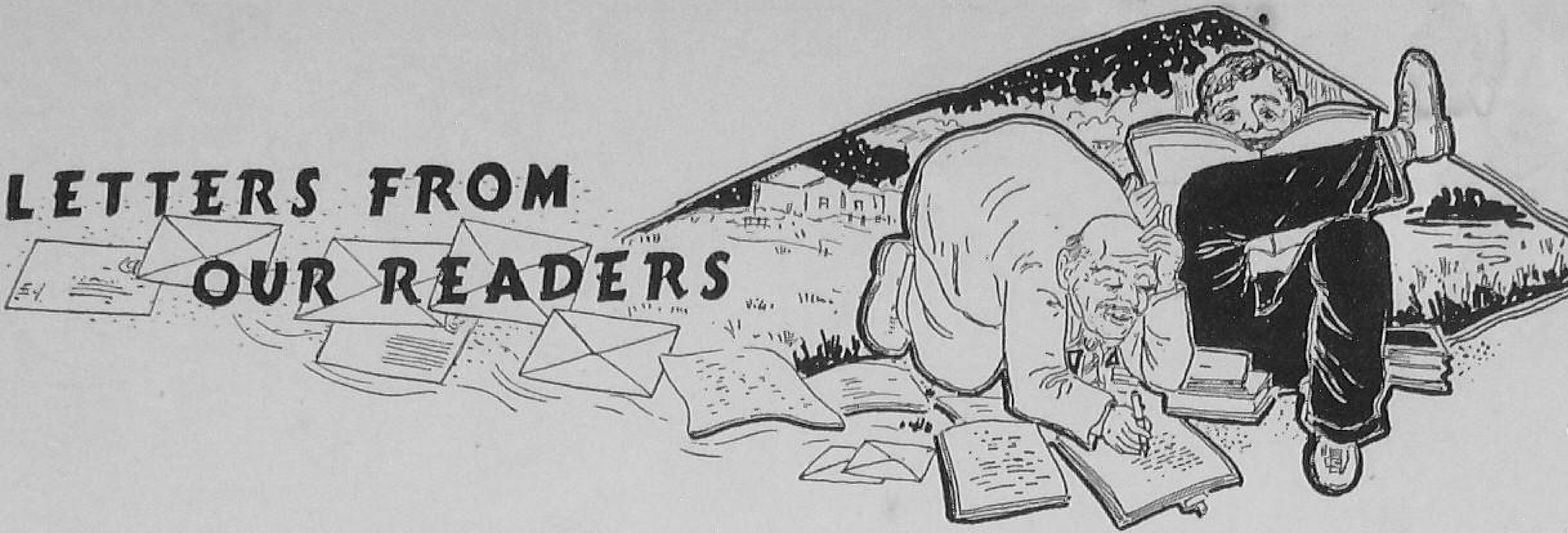
THE BLIND HORSE

Sasank Mukerjee, Development Assistant to Commissioner, Raipur

BANTHA is the kotwar of village Rakhi in Kurud block of Raipur District. The first time I went to Rakhi, I saw a short wiry man with long flowing hair very active in the crowd. He led the way to the primary school, he made the children sit down in a very disciplined manner and later took a prominent part in the Ramayanpath. He had a smile always on his face which extended almost from one ear to the other. At the time of departure, I asked Beniramji, the Sirpanch of the village about the man with the long flowing hair. Imagine my surprise when I was told that the man is none other than the village Kotwar who rejoices in the name of Bantha. He was in 'Mufti'—a bunyan and a short dhoti and hence his identity had been effectively camouflaged. Beniramji told me that Bantha had taken to development work as a duck takes to water and was always taking a leading part in any community work which was started by the villagers. I again looked at Bantha who at that moment was busy talking to the Veterinary Assistant Surgeon about collecting all the cattle of the village at one place for innoculation against rinderpest.

I visited the village again after about a month. Bantha was not to be seen. I asked Beniramji about him. He told me that he had gone on his horse to Kurud to arrange for a mistry for the Mahila Mandal building. I didn't know that Bantha had a horse. Beniramji related the story of Bantha's acquisition of the horse with great relish. A horse had been found grazing in the field of a cultivator and it was taken to the cattle pound. It was found that the horse was as blind as a bat. After the expiry of the stipulated period within which nobody turned up to claim the horse, it was put to auction. But there was not a single offer. In desperation, the pound-keeper set the horse free. Bantha took pity on the horse and took it to his own house. Since then, he was going about merrily on the horse, attending to his self-imposed multifarious duties and he continues to do so even today. If you happen to pass by Rakhi village on your way from Raipur to Jagdalpur and if you see a man with long flowing hair, with a merry song on his lips, riding on a blind horse, then you will know that it is Bantha, the village Kotwar going to the Block headquarters to request for participation by the officials in some new village programme.

LETTERS FROM OUR READERS



OH, FOR A TABLE

Sir,

I wish to draw the attention of higher authorities towards the fact that we the Gram Sevaks are not still provided with any kind of furniture. I think a table and some chairs or a desk and dari, a bench and an almirah should at least form part of our accessories.

Yours etc.
H. K. Swami,
Gram Sevak
N.E.S. Block Bhikangaon.
Distt. Nimar. M.P.

OH, FOR A NAME !

Sir,

In one of the letters addressed to you by one Gram Sevak, from Andhra Pradesh, it was stated that the designation "Gram Sevak" is misunderstood by the villagers and the Gram Sevaks are looked down upon as menials etc., and the Gram Sevak wanted a change of the designation. A reading of the letter (and similar letters written by some other Village Level Workers) show that the spirit of service with which the designation of the Village Level Worker is linked is not properly understood either by the Gram Sevaks or the people. Even now there are villagers who are not able to comprehend "service" by Government agents, for they have been accustomed for a long time past, to a "Rule" by Governments but not "service". They are accustomed to associate the word Sevak with the work of a menial. So, a change of attitude both on the part of the "Gram Sevaks" and other Government servants, as well as on the part of the people, is necessary. In our Training Institutions, we are preaching this philosophy of service to our Gram Sevak trainees and it is our fond hope that they will bring about the change in the attitudes of the people, by their selfless service.

Perhaps a change in designation of the Village Level Worker from the present "Gram Sevak" may pave the way for this change of attitude on either side. Any one of the following terms may be considered for the proposed change :—

(1) Gram Vistar Pracharak,
(2) Samaj Vikas Pracharak and
(3) Village Development Worker.

Service to man is service to God but it takes time for this philosophy to be understood by all.

Yours etc.
P. Somayajulu,
Superintendent
Basic Agricultural School,
Bapatla,
Andhra Pradesh.
2-12-57

THE SACRIFICIAL GOAT

Sir,

Recently we arranged our first Village Leaders' Camp which continued for 7 days. One of the most interesting incidents that took place in the camp is worth narrating. On the 6th day of the camp, we saw the two 'so-called' leaders of a nearby village coming with a pair of goats for the offer of a feast to the members of the camp. The story of the goats is rather interest-

ing. It seems in one of the villages there was an outbreak of small-pox. The villagers had offered these two goats to the goddess Sitala (goddess of small-pox) for relief from this disease. Meanwhile the representatives of this village attended our camp wherein many topics relating to the epidemic were discussed. They realised their stupidity and finally persuaded their village people to spare the goats for the members of the camp. The villagers for the first time understood the real cause of the disease and the vaccinator who had till then failed to persuade them to get themselves vaccinated was suddenly in great demand.

Yours etc.
P. K. Barooah,
Project Executive Officer,
Sonapur.
Dimoria C.D. Block
25-11-57

ALL-INDIA TOURS

Sir,

While all-India tours for the benefit of villagers are being arranged now and then by various States, no such provision has been made for the Gram Sevaks who, perhaps, need it more than the villagers. May I request the concerned authorities to take up this issue and arrange all-India tours at least for 100 Gram Sevaks every year. If need be, the Gram Sevaks may be asked to contribute half the expenses towards the tour and the period of journey may be treated as on duty.

Yours etc.,
G. J. Rajappan,
Gram Sevak

REFRESHER COURSE

Sir,

While at the training centre, the Gram Sevak gets his mind infused with vigour and enthusiasm for work. His ambition then is to work ceaselessly and he gets busy with developmental work in his area. For some time he gets on with his work wonderfully. But gradually he finds himself in the midst of many problems which take away much of his energy and enthusiasm.

I would like to suggest that the Gram Sevaks need some sort of a refresher course every year in order to regain the same enthusiasm and vigour. The refresher course might be in the form of lectures delivered by eminent personalities for a particular period. Or a general conference of Gram Sevaks in a particular district or zone may be convened and matters of interest for the programme discussed. This refresher course might be conducted once in a year.

Yours etc.,
V. V. Ramiah,
Tirumangalam Block,
Distt. Madurai.

GRAM SEVAK AND THE CO-OP. MOVEMENT

Sir,

The Co-operative Movement has not made much headway for the last five years. It is because that it has not been taken so seriously as other items by our Community Development programme. A Gram Sevak who has comparatively a small area to serve and his close contacts with the inhabitants of his area could help a great deal in organising the co-operatives. The responsibilities of the Extension Officer (Co-operative) are very heavy and so far it has not been possible for him to build a Gram Sevak for his work. The Gram Sevak who is a multipurpose worker has to arrange his programme in such a way as to achieve his objective of fuller development of his area. But so far the Gram Sevak has been attending mostly to agriculture, animal husbandry, public health and social education. In the post-intensive Blocks when the work load on individual worker will decrease the services of the Gram Sevak can be utilised very usefully for the development of the co-operative movement.

Yours etc.
S. R. Sharma, B.D.O.
C. Block, Bhattiyat.

If you have not so far written a single letter in these columns, it shows that you are not ready to share your experience with others. We hope you have some experience to pass on to others.—Ed. G. S.

KNOW YOUR INDIA

WEALTH OF ASSAM

To THE north-east corner of India, at the foot of the Himalayas, lies the triangle-shaped State of Assam. Save a narrow mountainous strip of land in West Bengal which joins this State to India, it is surrounded on all sides by foreign countries like Tibet, Burma, and East Pakistan. To the devout Hindu, Assam is known by the mighty Brahmaputra and the holy spot of Kamrup. But to the country at large, the State is known through its rain-soaked Cherapunji, one-horned rhinoceros, Petroleum, the tribals, and last but not the least its flora and fauna. There is hardly any State in India which can rival Assam in variety and abundance of flora and fauna.

Except the narrow Valley of the Brahmaputra and many of its tributaries, Assam is mountainous in character and is clad with dense foliage. Of the many precious gifts, that Nature has bestowed upon the State her magnificent forests and wild-life, are the most valuable ones.

Forest produces are commonly classified into two categories i.e. Major and Minor. Timber and firewoods come under the head Major forest produces whereas Bamboo, canes, grass and reeds, orchids, ferns, medicinal plants, lac, gums and resins and a host of other come under the second category. Forests of Assam are rich in both these varieties.

Indiscriminate felling of trees during the last world war has deprived the country many of its good timbers. Besides, the country was import-

ing teak wood from Burma for constructional as well as other purposes. But of late Burma has put a restriction on the export of her teak and other varieties of timber. Indian Railways happen to be the biggest single unit in the country consuming large quantities of *Sal* and other kinds of timber. Since independence there has been a great spurt in constructional activities. Many industries have begun to consume larger quantities of timber for various purposes. Naturally, therefore, dearth of first class timber is being felt inside the country. Assam timber though not of a very high quality, if properly seasoned and processed can meet the demand to a great extent. The main uses of timber are for constructional purposes, furniture making and for manufacturing plywood, match wood and box wood.

Some of the important species of Assam timber, best suited for constructional purposes are *Sal*, Akshi, Sida, Bhomra, Paroli, Satiana, Nahor, Ajhar, Hollock, Champas, Bonsum, Cham, Anari, Gunserio, Jutuli, Bela, Hollong, and Giurjan.

Bhelu are, the giants of Assam forest, yield first-class boxwood; so is the case with Khokan of Riparian forests.

Khair and Sisso, the two important varieties found in the Riparian forests are excellent for furniture making.

Pitali, another variety is best suited for matchwood manufacture.

MINOR FOREST PRODUCTS

Minor forest produces of Assam are as abundant as the major ones and have got equally bright prospects of early development.

Among the minor forest produces, Bamboo tops the list. There are about 25 species of bamboos occuring in the forests of Assam, of which Jati and Kako of Assam valley, Waiong, Muli of the Surma valley are the most important. *B. tulda* and *B. balcooa* are extensively used for constructional purposes. Muli is suitable for making umberall-handles, house-walls, etc. All these bamboos are found in abundance and are also suitable for the manufacture of paper-pulp. For this they are destined to play an important role in the industrial growth of Assam.

Canes—There are about ten varieties of canes growing in the forests of Assam of which Jati, Tita, Laza, and Raidung are the most important. Large quantities of these canes occur in the Sadiya, Lakhimpur, Sibsagar, Nowgong, Cachar and Darrang districts and yield considerable revenue to the State. The major portion of these canes, both whole and split, are now used for making baskets for tea-gardens, railways and other Government departments and various industries.

Grasses and Reeds are found in abundance in the Savannas and in the sandy banks of the Brahmaputra and in all the districts of Upper Assam. Surma valley also produces large quantities of this grass which is mostly used for thatching purpose at present. All these grasses are suitable for the manufacture of paper-pulp.

Orchids and ferns—Large varieties of Orchids and Ferns are found throughout Assam some of which can adorn any garden.

Patidal and Patidol—These useful plants for mat-making are found in the low lands.

Under the head 'Other Produces' mention may be made of Kutch and Kutha a well-known product of Khair trees. Agar which is famous for producing the essence Aguru and the species of trees like Haritaki and Bahera yielding Myrabolans.

Large varieties of medicinal plants are found in the forests of this State, but no systematic effort so far has been made to make the best use of them. Some of the important medicinal plants are Nux-Vomica, Cinchona (that yield Quinine), Adathola Varica—a shrub producing vaccine useful for Asthma and Kurzil—a tree whose fruits yield Chalmugra oil useful for the treatment of skin diseases.—(M.K.R.)

India annually exports nearly one-fifth of her total production of unmanufactured tobacco—roughly 100 million lbs.—of which 90 million comprise cigarette tobacco. Most of this tobacco is grown in Andhra Pradesh and the exports bring to the country over Rs. 12 crores in foreign exchange.

The Story of a Village

Hans Raj Bhatia
Gram Sevak, Ganaur N.E.S. Block,
(District Rohtak) Punjab.

ABOUT 175 years ago in the village Ganaur, District Rohtak, there lived two brothers, Girdhari Singh and Kessari Singh. The former was the eldest and was the Lambardar of the village. It was the time of "Kachi Amaldari" when a Lambardar could collect all revenues from the villagers according to his will and misuse powers which were granted to him by the Government of the Day.

Kessari Singh was richer and wiser than his elder brother. Due to the unbearable behaviour, Kessari Singh could not put up with the behaviour of the elder brother and so left Ganaur. He settled down with some other families in his own field. A few days latter some other aggrieved families joined him and constructed their houses near about. Gradually a village of these houses sprang up and it came to be called Garhi Kessari. In Haryana, the word Garhi means a village of a small population and Kessari was the founder of this place and thus the village is called Garhi Kessari.

This small village is about a mile off from Ganaur. It has a population of about one thousand, but inspite of this, there is no village panchayat of its own. It is under the village panchayat, Ganaur. Only one member has been elected to represent the village. Before, the Community Project Scheme started, the condition of this village was pitiable. The roads were so dirty and muddy that one could not pass easily, and even the village cattle hesitated to pass through them. Village chopal was in the worst condition and none liked to sit there. There was no school. The approach road was sandy, curvey and lengthy. The peasants were mostly illiterate and ignorant of the improved methods of cultivation.

When Community Project Scheme was started in this area the Extension Worker persuaded the people for development activities. He went through all the problems and assessed the needs of the village. He convinced the people about an ideal village and persuaded them to change their attitude. At last, through his untiring efforts, the villagers agreed to act on his advice. At first, he formed a Vikas Mandal and persuaded the influential persons of the village to become its members. This Mandal in course of time became the panchayat. The work started with great enthusiasm and a lot of development work was done in the village.

At first, the Chopal was repaired, white washed, and made worth sitting. It was then converted into the Community-Cum-Recreation Centre. All the streets were paved. Drinking wells were parapetted. Arrangements were made for drainage. A good approach road was constructed by doing earth work. The villagers dug their manure pits and began to use chemical tertilizers. Improved impiements, improved varieites of seeds and best methods of cultivation came into practice. A Basic Primary School was granted to this village under the Community Project Scheme. An Adult literacy centre was started. Arrangements were made to clean the streets daily. Electricity has also been fitted in the village. Due to all this, Garhi Kessari has become a good village of New India.

The change between the past and the present made an impression in the minds of the village people and enthused them to do development work of all kinds. Today in this area this small village remembers with gratitude Kessari Singh the founder of village.

BEE-KEEPING AND AGRICULTURE

DR. C. G. BUTLER

(Contd. from the last issue)

IN MOST cases it has been found that a shortage of these insects is most easily and economically made good by taking hives of bees to the crops concerned just as they come into flower. For this purpose it is by no means necessary that the bees should be housed in modern movable comb hives. Colonies of bees in any type of hive are quite suitable, provided that they can readily be transported to the site where they are required and removed again afterwards when their presence might constitute a nuisance and provided that the colonies are strong. As a first estimate, it will probably be wise to allow at least one colony to each acre of the crop concerned.

In many parts of the world it will almost certainly be much simpler and more economical for farmers to hire bark and similar simple hives for this purpose and to arrange for their owners to continue to look after them. Alternatively, a farmer may wish to keep his own bees for crop pollination, and by keeping them in Western type movable-comb hives, which have been carefully adapted in size to suit the bees with which he is working, and managing them skilfully, he can expect to produce more and cleaner honey and wax than can be produced by the older methods.

Again, the honeybee that is indigenous to a country, or one that has lived there for many years, is likely to prove much more useful both as a pollinating agent and as a honey and wax producer than a honeybee from another part of the world. For example, it has become very clear that, generally speaking, the European honeybee (Apis mellifera, melifera), is ill-adapted to life in the tropics and is, therefore, of very little use in Southern India and Ceylon, where the Indian honeybee (Apis indica) is indigenous. This is likely to prove to be equally true in tropical Africa where the African honeybee (Apis mellifera unicolour) is much more likely to be of value.

It is probable, however, as has happened with various races of the European honeybee which have been kept for many years, that careful selection and breeding will lead to the production of strains of the African honeybee, and of the Indian honeybee, which are much superior to those kept by beekeepers at resent.

LIMITED 'FORAGING AREAS'

Research on the use of the honeybee as a pollinating agent has been greately intensified in recent years and many observations have been made on the behaviour of worker honeybees in the field. At Britain's Rothamsted Experimental Station at Harpenden, and elsewhere, it has been demonstrated that, contrary to popular belief, honey bee seldom, if ever, wander at random over a crop of flowers. Instead each bee normally confines her attention to the flowers of plants growing in a relatively small area.

The size of this so-called "foraging area" of each bee depends mainly on two things—the average amount of food present in each flower, and the density of the flowers. If the flower density is low, then the foraging area of an individual bee is likely to be much greater than it is when the flower density is high. In the case of fruit trees for example the foraging area of an individual worker honeybee sometimes only contains a hundered or two flowers of a single tree when food is abundant in them, whereas when it is scarce the bee will extend her foraging area to include many more flowers, often those growing on two or more trees.

CROSS-POLLINATION

Thus, although the foraging area of a bee changes in size from time to time and may include flowers on more

than one tree, it is difficult at first to understand how cross-pollination between different trees is effected—as indeed it is. This is particularly so in case, let us say, of a sun-flower, where a single blossom sometimes forms the whole foraging area of a bee.

Observation of the behaviour of carefully marked bees has shown that this cross-pollination can be brought about if the degree of competition between the bees for the available food supplies is sufficiently great. When this is so, many of the bees who visit a given group of flowers find that the supply of food available in them is too small to be satisfactory and move on to other groups of flowers carrying pollen with them as they go.

Therefore, when it is desirable that cross-pollination between the flowers of different plants should occur, it is of very great importance to encourage as much competition as possible amongst the bees available. This is usually most readily achieved by placing the hives of bees close together in one group near the centre of the crop concerned; or, if the crop covers a very large area, in a number of groups at intervals in it. Grouping of the this way usually results in very keen competition between the bees on the flowers nearest to their hives and causes many of them to wander from these to flowers further away, thus carrying pollen with them and effecting cross-pollination.

Further work on this subject with reference to particular crops such as the field bean, fruit and red clover is being carried out in Britain at Rothamsted and at various bee research laboratories in different parts of the world.

BEES FOR HIRE

Beekeepers in Europe, North America, and other parts of the world are already discovering that the provision of strong colonies of bees for hire to farmers and fruit growers for pollination can make a useful contribution to their income, and in their turn the farmers are finding the investment well worthwhile.

Apart altogether from the production of such valuable commodities as honey and wax, there seems little doubt that modern beekeeping has an extremely important part to play in the well-being of many different peoples by providing the large numbers of bees that are required as pollinating agents for so many essential food and pasturage plants.

THREE FOOLS AND A LION

(*Continued from page* 16)

scholar said that he was an expert in supplying skin, flesh and blood to the skeletons and the third remarked that he could bring it to life. Now the first man, by dint of his knowledge put the skeletons together; the second provided it with flesh and blood and when the third was about to give life to the skeleton of the dead body, the fourth Brahmin remarked, "Wait a minute, you know this is the body of a lion and if he comes to life, he can eat us all". But the third man contemptuously remarked, "You simpleton, do you want me to insult my knowledge and learning ? I want to prove that I can bring this dead body to life immediately." The simpleton replied, "Give me a few minutes more. Let me climb the tree nearby and then you can bring it to life." Thereupon, the fourth Brahmin climbed up the tree and the lion was brought to life. The moment it came to life it pounced upon the three Brahmins and ate them up. That is why it has been said that scholarship without commonsense is dangerous.

Opposite page : From the bowels of Mother Earth.

The daily grind—to feed the nation.

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